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10/609,426

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Richard T. Oesterreicher

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EXAMINER

BRUCKART, BENJAMIN R

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/609,426	Applicant(s) OESTERREICHER ET AL.	
	Examiner BENJAMIN R. BRUCKART	Art Unit 2446	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 January 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-35 are pending

Claims 1, 13 and 21 are independent.

Claims 1 and 21 are amended.

Response to Arguments

Applicant's arguments filed in the amendment filed 12/2/08, have been fully considered but are moot in view of new grounds of rejection. The reasons set forth below.

Applicant's invention as claimed:

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-32 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 21-40 of copending Application No. 11/468,613. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claim language of the '613 application essentially recites the exact same limitations as its parent case, the instant application.

Art Unit: 2446

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Although Applicant has reserved action on this rejection until allowance of one of the cases, the rejection will be maintained until a Terminal Disclaimer has been filed, or the claims are amended such that they are patentably distinct from one another.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2, 4-7, 9-11, 33; 13-19; 21-22, 24-27, 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,370,584 by Bestavros et al in view of U.S. Patent No. 6,466,978 by Mukherjee et al.

Referring to claims 1 and 21, Bestavros discloses a method of selecting a server from a plurality of servers to service a request for content (Bestavros: col. 3, lines 3-13), comprising:

designating a director from the plurality of servers to receive the request, wherein the designation is made on a request-by-request basis, wherein any of the servers can be selected as the director (Bestavros: col. 3, lines 3-21; the request is received by a particular host computer, and any host computer can receive the request at any time);

determining that the content is not stored on the director by accessing a state table stored on the director, wherein the state table includes parametric information (i.e. load values) for each server in the plurality of servers (Bestavros: determining whether to service or reroute the request based on a criteria, such as current load, and availability of data for the resource) (col. 3, lines 35-55);

under direction of the director, determining whether any of the servers has the content stored thereon by examining the state table (i.e. if the director does not have the particular data, it

Art Unit: 2446

is going to have to reroute the request, and based on the state table, it will determine which server has data available for the request) (col. 3, lines 35-55);

determining a load factor for the other servers having the content (col. 3, lines 35-55);
and

selecting one of the other servers based on the load factor (i.e. reroute requests based on conditions such as current load) (col. 3, lines 35-55).

Bestavros does not explicitly disclose the addition of new content to a particular server, updating state tables, and notifying other servers of the new content.

However, Mukherjee discloses another server clustering system which discloses loading data files to a client to create a new file manager (which would inherently include the updating of internal state tables), and the new file manager will notify other clients 408 that use the affected files of the change in file manager status (Mukherjee: Figure 9C; col. 15, line 49 to col. 16, line 14; which would inherently include the updating of the client's state tables).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teaching of Mukherjee's file manager notification system to the server farm of Bestavros in order to notify the servers of Bestavros specifically which server is hosting which particular file, thereby ensuring that the servers have the most up to date information with which to service client requests.

Referring to claims 2 and 22, Bestavros discloses the invention as described in claim 1.

Bestavros does not explicitly disclose the director is selected in a round-robin fashion, rather that a request is sent to a particular host computer (see rejections above), however round-robin DNS service is well known in the art.

By this rationale, "Official Notice" is taken that both the concepts and advantages of providing for round-robin DNS (i.e. selecting servers in a round-robin fashion every time a domain name request is received) is well known and expected in the art. It would have been obvious to one of ordinary skill in the art to modify the system of Bestavros to include a DNS server selecting the host computers in a round-robin fashion in order to provide an efficient method to distribute requests without bottlenecking using well known domain name protocols.

Art Unit: 2446

Referring to claims 4 and 24, Bestavros discloses selecting the director if the content is stored on the director (Bestavros: col. 3, lines 35-55; based on the state of the director including availability of the resource, the director will determine whether to service or reroute the request).

Referring to claims 5 and 25, Bestavros discloses the parametric information includes functional state and current load of each server (Bestavros: col. 3, lines 35-55; current load, which inherently includes in some way that the server is functional or not).

Referring to claims 6 and 7; 26 and 27, Bestavros discloses the invention substantively as described in claim 5, however does not specifically disclose that the parametric information comprises whether each server comprises extended memory or an inline adaptable cache, however one of ordinary skill would find this obvious to include this into the load calculations since the inline cache or extended memory would greatly affect the ability of the server to handle connections.

By this rationale, “Official Notice” is taken that both the concept and advantages of taking into account whether the server has extended memory or an inline adaptable cache into the load calculations of Bestavros is well known in the art. It would have been obvious to one of ordinary skill in the art to modify the teaching of Bestavros to include the use of extended memory or caching into the rerouting calculations since Bestavros lists numerous metrics which can be used to determine the criteria (i.e. load, data availability, type of service, etc.) (col. 3, lines 36-55). This would motivate one of ordinary skill in the art to find more metrics which can be used to determine the rerouting criteria, eventually finding the utilization of extended memory and caching.

Referring to claims 9 and 29, Bestavros inherently discloses rejecting the request if the content is not available on any of the servers (i.e. this is an inherent feature of HTTP, that if a document is not found, the server will return an HTTP 404 file not found response) (e.g. abstract).

Referring to claims 10 and 11, 30 and 31; Bestavros discloses forwarding/redirecting the request to the particular server (Bestavros: col. 3, lines 13-35; reroute a request).

Regarding claim 13, the Bestavros reference teaches a server computer configured to direct a request for content among a plurality of server computers (Bestavros: col. 3, lines 3-21) comprising:

- a state table comprising parametric information for each server in the plurality of server computers (Bestavros: col. 3, lines 3-21), said state table enabling any one of the plurality of server computers to act as a director, said parametric information comprising information identifying assets maintained on the plurality of server computers (Bestavros: col. 3, lines 33-55);

- a communication component for concurrently pushing changes to the state table to each of the other servers in said plurality of server computers upon any such change (Bestavros: col. 3, lines 55-67);

- a transmission of information about the change to each of the other servers in said plurality of server computers (Bestavros: col.4 , lines).

The Bestavros reference does not explicitly disclose the addition of an asset to the server computer initiates a change to the state table of the server computer and a transmission of information about the change to each of the other servers in said plurality of server computers..

However, Mukherjee discloses an addition of an asset to the server computer initiates a change to the state table of the server computer and a transmission of information about the change to each of the other servers in said plurality of server computers (Mukherjee: Figure 9C; col. 15, line 49 to col. 16, line 14; which would inherently include the updating of the client's state tables; col. 15, lines 20-27 teaches sending the updated data out) in order to

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teaching of Mukherjee's file manager notification system to the server farm of Bestavros in order to notify the servers of Bestavros specifically which server is hosting which particular file, thereby ensuring that the servers have the most up to date information with which to service client requests.

Referring to claim 14, the modified Bestavros reference teaches the server of claim 13.

Art Unit: 2446

wherein the server computer is a member of a load balancing group, and distributing the updates to the group (Mukherjee: col. 15, lines 20-27).

Regarding claim 15, the server of claim 13, further comprising a redirection means for identifying one of the plurality of server computers where a requested asset is stored (Bestavros: col. 3, lines 35-55).

Regarding claim 16, the server of claim 13, further comprising a forwarding means for sending the request to one of the plurality of server computers where a requested asset is stored (Bestavros: col. 3, lines 35-55).

Regarding claim 17, the server of claim 13, wherein said parametric information further comprises functional state and current load of each server computer (Bestavros: col. 3, lines 35-55).

Regarding claims 18 and 19,

Bestavros discloses the invention substantively as described in claim 13, however does not specifically disclose that the parametric information comprises whether each server comprises extended memory or an inline adaptable cache, however one of ordinary skill would find this obvious to include this into the load calculations since the inline cache or extended memory would greatly affect the ability of the server to handle connections.

By this rationale, "Official Notice" is taken that both the concept and advantages of taking into account whether the server has extended memory or an inline adaptable cache into the load calculations of Bestavros is well known in the art. It would have been obvious to one of ordinary skill in the art to modify the teaching of Bestavros to include the use of extended memory or caching into the rerouting calculations since Bestavros lists numerous metrics which can be used to determine the criteria (i.e. load, data availability, type of service, etc.) (col. 3, lines 36-55). This would motivate one of ordinary skill in the art to find more metrics which can be used to determine the rerouting criteria, eventually finding the utilization of extended memory and caching.

Regarding claim 33, the modified Bestavros the method of claim 1.

The Bestavros reference fails to teach updating parameteric information in a table.

However, the Mukherjee reference teaches updating parametric information in a state table associated with the selected server (Mukherjee: Figure 9C; col. 15, line 49 to col. 16, line 14; which would inherently include the updating of the client's state tables), and

communicating updated parametric information to the other servers among said plurality of servers (Mukherjee: col. 15, lines 20-27).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teaching of Mukherjee's file manager notification system to the server farm of Bestavros in order to notify the servers of Bestavros specifically which server is hosting which particular file, thereby ensuring that the servers have the most up to date information with which to service client requests.

Claims 3 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bestavros in view of U.S. Patent No. 6,466,978 by Mukherjee et al in further view of Jindal et al. (USPN 6,092,178) (hereinafter Jindal).

Referring to claims 3 and 23, Bestavros discloses the invention as described in claim 1.

Bestavros does not disclose selecting a director based on a load factor analysis of each server, the load factor analysis based on parametric information stored in a state table, rather the request is just received.

In analogous art, Jindal discloses another request service server system which discloses selecting a server (i.e. director) based on loads (i.e. statistical information) stored in a state table (Jindal: Abstract; col. 8, lines 10-29; data file 104).

It would have been obvious to one of ordinary skill in the art at the time of the invention create the invention of modified Bestavros with Jindal by replacing the DNS server system of Bestavros with the load-balancing DNS server of Jindal in order to realize the benefits described in Jindal to the system of Bestavros, namely the ability to provide efficient load-balancing techniques in a DNS server as described in Jindal (col. 3, lines 10-20).

Art Unit: 2446

Claims 12, 34-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bestavros in view of U.S. Patent No. 6,466,978 by Mukherjee et al in further view of Aversa et al. (“Load Balancing a Cluster of Web servers Using Distributed Packet Rewriting”; Boston University; 2000) (hereinafter Aversa).

Referring to claim 12, the modified Bestavros reference discloses the invention of claim 1.

The Bestavros reference does not specifically disclose selecting a server by calculating a load factor, identifying servers are below threshold limits, and selecting a server from the available servers with the lowest load factor, otherwise selecting a server having the lowest load factor from the plurality of servers having the content.

In analogous art, Aversa discloses calculating a load factor for each server (p. 3, col. 1), identifying as available servers one or more servers whose parameters below threshold limits (i.e. determine whether host's load is less than MaxLoad), upon determining that there are no available servers, selecting a server from the available servers having the lowest load factor (i.e. “server with the lowest load is selected”) (p. 3, col. 1).

It would have been obvious to one of ordinary skill in the art to combine the teaching of Aversa with Bestavros in order to better take into account the loads of the other servers of Bestavros, thereby reducing the likelihood of server overload.

Regarding claim 34, the modified Bestavros reference the method of claim 33.

The modified Bestavros reference does not specifically disclose how the updated data is transmitted. However, the Aversa reference teaches updated parametric information is communicated via multicast (Aversa: page 1, first col, first para).

It would have been obvious to one of ordinary skill in the art to combine the teaching of Aversa with Bestavros in order to better take into account the loads of the other servers of Bestavros, thereby reducing the likelihood of server overload.

Regarding claim 35, the modified Bestavros reference the method of claim 33.

The modified Bestavros reference does not specifically disclose how the updated data is transmitted. However, the Aversa reference teaches updated parametric information is communicated via a broadcast message (Aversa: page 1, first col, first para).

Art Unit: 2446

It would have been obvious to one of ordinary skill in the art to combine the teaching of Aversa with Bestavros in order to better take into account the loads of the other servers of Bestavros, thereby reducing the likelihood of server overload.

Claims 8, 20 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bestavros in view of U.S. Patent No. 6,466,978 by Mukherjee et al in further view of U.S. Patent No. 6,852,624 by Colby et al.

Referring to claims 8, 20 and 28; the Bestavros reference discloses the invention as described in claims 1 and 13.

The Bestavros reference does not disclose the parametric information includes whether the asset is a new release.

However, the Colby reference teaches a server system which said parametric information further includes whether each asset is a new release (Colby: col. 13, lines 20-54) in order to improve quality of service in anticipating and predicting the flow of data (Colby: col. 2, lines 4-50).

It would have been obvious to one of ordinary skill in the art at the time of the invention to create the invention of modified Bestavros to include new asset parameters as taught Colby in order to improve quality of service in anticipating and predicting the flow of data (Colby: col. 2, lines 4-50).

REMARKS

Applicant argues the amended claim 1 and 21. The examiner stresses that load balancing is a very mature and saturated art and a plurality of explicit details are requested to push the case past rejections.

The Applicant Argues:

Applicant argues that the Bestavros et al in view of Mukherjee et al do not teach ‘detecting addition of new content to a particular server, updating state tables, and notifying other servers of the new content.’

Applicant argues the Bestavros and Aversa references do not teach the features of claim 12.

In response, the examiner respectfully submits:

The examiner maintains the rejection because the prior art teaches the limitations as cited.

Regarding claims 1 and 21, the Mukherjee reference teaches a clustering system which discloses dynamically and statically servicing client requests with data stored by file managers. A “new file manager notifies the clients that the use of the affected files of the change in the file manager status” (top of col. 16). The file managers are monitored for load. As loads need to be adjusted (lightened, added to), the files managers transfer load between each other. As the load changes (because the number of file managers responsible for that file changes), the list of files being affected changes. Each of the servers, updates and notifies other servers of the change (col. 15, lines 20-27). The step of detecting the addition of new content is when data is shared and transferred between file managers. Updates of the state tables are made and notification sent (communicating the information).

Regarding claim 8, the argument is addressed by the introduction of a new prior art reference.

Regarding claim 12, the limitation 'upon determining that there are no available servers' is taught by Aversa when the new request is received by a host. The host checks its load, this is interpreted to teach checking if it's available to serve the content. If it isn't, the host forwards the request to a host or server with the lowest load.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin R. Bruckart whose telephone number is (571) 272-3982. The examiner can normally be reached on 9:00-5:30PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeff Pwu can be reached on (571) 272-6798. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2446

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Benjamin R Bruckart
Examiner
Art Unit 2446

/Benjamin R Bruckart/
Examiner, Art Unit 2446